

**Claims:**

1. Method for positioning of a substrate and for contacting of a test object with the following steps:
  - a) putting the substrate with at least one test object on a holder;
  - b) positioning the substrate relative to an optical axis of a test apparatus with a positioning activity;
  - c) positioning the contact unit relative to the optical axis, whereby the contact unit is positioned independent of the positioning activity of the substrate;
  - d) contacting of at least one contact assembly of the test object with the contact unit.
2. Method according to claim 1, whereby during contacting of the contact unit with the at least one contact assembly of the test object at least two contact pins of the contact unit are contacted with contact pads of the at least one contact assembly, and whereby for contacting the contact pins of the contact unit are not moved relative to each other.
3. Method according to any of the preceding claims, whereby the contact unit is positioned with an own drive.
4. Method according to any of the preceding claims, whereby the positioning steps (b, c, respectively) comprise a movement perpendicular to the optical axis of at least 5 cm, preferably of at least 20 cm.
5. Method according to any of the preceding claims, whereby the steps b) to d) are repeated several times during testing of a substrate, preferably at least between the testing of each test object.

6. Method for testing of a substrate with several test objects with a test apparatus, comprising the following steps:

- putting the substrate on a holder;
- contacting of a first test object with a contact unit;
- positioning of the substrate so that a first area of the first test object lies in a test range of the test apparatus;
- testing of the first area of the test object;
- displacing the substrate so that at least a further area of the first test object lies in the test range of the test apparatus;
- displacing the contact unit so that the position of the contact unit is essentially unchanged with respect to the first test object;
- testing of the further area of the test object;
- displacing the contact unit and the substrate relative to each other so that a further test object can be contacted.

7. Method according to claim 6, whereby the contact unit is displaced by tracking.

8. Method according to claim 6, whereby the contact unit is displaced by carrying along.

9. Method according to any of claim 6 to 8, whereby the contact unit is displaced as long as a contact to the substrate is present.

10. Method according to any of claim 6 to 9, whereby the test range is scanned by a beam deflection of a corpuscular beam in two directions.

11. Method according to any of claim 6 to 9, whereby the test range is scanned by a beam deflection of a corpuscular beam in one direction and a substrate movement in another direction.
12. Method according to any of claim 6 to 11, whereby the contact unit is displaced as long as no contact to the substrate is present.
13. Method according to any of claim 6 to 12, whereby the contact unit is adapted to different forms of test objects.
14. Method according to any of claim 6 to 13, whereby the testing is conducted by scanning of the test range with a corpuscular beam and measurement of the second area electrons.
15. Method according to any of claim 6 to 14, whereby the testing is conducted by scanning of the test range with a corpuscular beam and measurement of a signal fed through the contact unit.
16. Method according to any of claim 6 to 15, whereby before the testing a vacuum of smaller than  $1 \cdot 10^{-3}$  mbar is generated.
17. Apparatus for contacting for the test of at least one test object (301) on a substrate (140), comprising:
  - a holder (130) for the substrate;
  - displacement unit (132, 134) for the holder with a holder displacement range in x-direction and a holder displacement range in y-direction;

- a contact unit (150) for contacting of the at least one test object, whereby the contact unit is displaceable in x-direction and in y-direction, and the contact unit displacement range in x-direction and/or the contact unit displacement range in y-direction are smaller than the respective holder displacement range.

18. Apparatus according to claim 17, whereby the contact unit displacement range in x-direction and in y-direction is larger than a corresponding contact alignment displacement range (220, 222) of the contact unit.

19. Apparatus for contacting for the test of at least one test object (301) on the substrate, whereby for the test a test apparatus with an optical axis (102) is used, comprising:

- a holder (130) for a substrate with at least one test object;
- a displacing unit for the holder;
- a contact unit (150) for contacting of the at least one test object, whereby the contact unit is displaceable and has essentially maximal the dimension of half of the holder dimension in one direction perpendicular to the optical axis.

20. Apparatus according to 19, whereby the contact unit has essentially maximal the dimensions of half of the holder the dimensions in two directions perpendicular to the optical axis.

21. Apparatus for contacting for the test of at least one test object with a substrate (140), whereby for the test a test apparatus with an optical axis (102) is used, comprising:

- a holder (130) for the substrate displaceable with respect to the optical axis (102);
- a displaceable contact unit (150),

whereby the contact unit is displaceable during the test of the substrate with respect to the optical axis and with respect to the holder.

22. Apparatus according to any of claim 17 to 21, whereby the contact unit is displaceable by at least 5 cm, preferably by at least 20 cm.

23. Apparatus according to any of claim 17 to 22, whereby the contact unit has dimensions, so that no area to be tested of the test object to be tested is covered by the contact unit.

24. Apparatus according to any of claim 17 to 23, whereby the contact unit has a size which is larger than the test range (302) during testing.

25. Apparatus according to any of claim 17 to 24, whereby the contact unit is connected with a displacing unit with a drive (152) for displacement relative to the optical axis.

26. Apparatus according to any of claim 17 to 25, whereby a synchronization unit (160) exists, which synchronizes the displacing unit of the contact unit and of the holder.

27. Apparatus according to any of claim 17 to 26, whereby the contact unit has contact pins for contacting.

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28. Apparatus according to claim 27, whereby the contact pins for contacting with the contact unit (150) are not movable relative to each other during the testing of a substrate.
29. Apparatus according to claim 27, whereby the contact pins for contacting with the contact unit (150) are not movable relative to each other.
30. Apparatus according to any of claim 17 to 29, whereby the contact unit (150) is adjustable on different sizes of test objects.
31. Apparatus according to any of claim 17 to 30, whereby the test object is at least one display (301) with a contact assembly (200).
32. Apparatus according to any of claim 17 to 31, whereby the apparatus is adapted to be used in a vacuum.
33. Apparatus according to any of claim 17 to 32, whereby the contact unit is connected with an external control (162) and/or a measurement unit (162).
34. Apparatus according to any of claim 17 to 32, whereby the contact unit is displaceable during the testing of the substrate.
35. Test system comprising:
- an evacuable test chamber (108);
  - a corpuscular beam column (104) with an optical axis (102); and
  - an apparatus according to any of claim 17 to 34.

36. Method for testing of a substrate with several test object, whereby for testing a test apparatus with an optical axis is used, comprising the following steps:

- putting the substrate a holder;
- contacting of a first test object with a contact unit;
- positioning of the substrate and the optical axis relative to each other so that a first area of the first test object lies in a test range of the test apparatus.
- testing of the first area of the test object;
- displacing the substrate and the optical axis relative to each other so that at least a further area of the first test object lies in the test range of the test apparatus;
- testing of the further area of the test object;
- displacing the contact unit and the substrate relative to each other, so that a further test object can be contacted.

37. Method according to claim 36, whereby the optical axis of the test apparatus is positioned relative to the substrate and the contact unit is displaced relative to substrate.

38. Method according to any of claim 36 to 37, whereby the test range is detected with a light optical system.

39. Method according to any of claim 36 to 38, whereby the contact unit is adapted to different forms of the test objects.

40. Apparatus for contacting for the test of at least one test object (301) on the substrate, whereby for the test a test apparatus with an optical axis is used, comprising:

- a holder (130) for substrate with at least one test object;
- a displacing unit for displacement of the optical axis (102);
- a contact unit (50) for contacting of the at least one test object, whereby the contact unit is displaceable relative to the optical axis and independent thereof relative to the holder and has essentially maximal the dimension of a half of the holder dimension in one direction perpendicular to an optical axis.

41. Apparatus according to claim 40, whereby the contact unit has essentially maximal the dimension of half of the holder dimension in two directions perpendicular to an optical axis.

42. Apparatus for contacting for the test of at least one test object on the substrate (140), whereby for the test a test apparatus with an optical axis (102) is used, comprising:

- an optical axis (102) displaceable with respect to the holder (130) for the substrate;
- a displaceable contact unit (150),

whereby the contact unit is displaceable during the testing of the substrate with respect to the optical axis and with respect to the holder.

43. Apparatus according to any of claims 40 to 42, whereby the contact unit is displaceable by at least 50 mm, preferably by at least 200 mm.



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44. Apparatus according to any of claims 40 to 43, whereby the contact unit has dimensions so that no area to be tested of the test object is covered by the contact unit.
45. Apparatus according to any of claims 40 to 44, whereby the contact unit has a size larger than the test range (302) during testing.
46. Apparatus according to any of claims 40 to 45, whereby the contact unit is connected with a displacing unit with a drive (152) for displacement relative to the optical axis.
47. Apparatus according to any of claims 40 to 46, whereby a synchronizing unit (160) exists, which synchronizes the displacing unit of the contact unit and a further displacing unit.
48. Apparatus according to claim 47, whereby the further displacing unit is a displacing unit for the optical axis.
49. Apparatus according to any of claims 40 to 48, whereby the contact unit has contact pins for contacting.
50. Apparatus according to any of claims 40 to 49, whereby the contact unit (150) is adaptable to different sizes of test objects.
51. Apparatus according to any of claims 40 to 50, whereby the test object is at least one display (301) with a contact arrangement (200).

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52. Apparatus according to any of claims 40 to 51, whereby the contact unit is connected with an external control (162) and/or a measurement unit (162).